

196

# General and Comparative Endocrinology

QP  
187  
G37

An International Journal

Editors-in-Chief

AUBREY GORBMAN

E. J. W. BARRINGTON

*Published under the Auspices of the Division of Comparative  
Endocrinology of the American Society of Zoologists, and the  
European Society for Comparative Endocrinology*

Volume 17

1971



ACADEMIC PRESS  
New York and London

Copyright © 1971, BY ACADEMIC PRESS, INC.

ALL RIGHTS RESERVED

NO PART OF THIS VOLUME MAY BE REPRODUCED IN ANY FORM,  
BY PHOTOSTAT, MICROFILM, BY RETRIEVAL SYSTEM, OR ANY  
OTHER MEANS, WITHOUT WRITTEN PERMISSION FROM THE  
PUBLISHERS.

# CONTENTS OF VOLUME 17

NUMBER 1, AUGUST 1971

A. Z. MEHDI AND A. CARBALLEIRA. Steroid Biosynthesis by the American Bullfrog ( <i>Rana catesbeiana</i> ) Interrenals. I. <i>In Vitro</i> Studies with Progesterone-4- <sup>14</sup> C and Δ <sup>5</sup> -Pregnenolone-4- <sup>14</sup> C . . . . .	1
A. Z. MEHDI AND A. CARBALLEIRA. Steroid Biosynthesis by the American Bullfrog ( <i>Rana catesbeiana</i> ) Interrenals. II. <i>In Vitro</i> Studies with Cholesterol-4- <sup>14</sup> C and Acetate-1- <sup>14</sup> C . . . . .	14
MARIAN JUTISZ, BERNARD KERDELHUÉ, ANNETTE BÉRAULT, JEAN PELLETIER, AND ANDRÉE TIXIER-VIDAL. Action <i>in vitro</i> du facteur hypothalamique de libération de l'hormone lutéinisante (LRF) sur l'antéhypophyse d'agnelle. I. Cinétique de l'excrétion de l'hormone lutéinisante (LH) . . . . .	22
ANDRÉE TIXIER-VIDAL, BERNARD KERDELHUÉ, ANNETTE BÉRAULT, RENÉE PICART, AND MARIAN JUTISZ. Action <i>in vitro</i> du facteur hypothalamique de libération lutéinisante (LRF) sur l'antéhypophyse d'agnelle. II. Etude ultrastructurale des tissus incubés . . . . .	33
A. BERLIND AND I. M. COOKE. The Role of Divalent Cations in Electrically Elicited Release of a Neurohormone from Crab Pericardial Organs . . . . .	60
BANGALORE I. SUNDARARAJ, S. K. NAYYAR, T. C. ANAND, AND EDWARD M. DONALDSON. Effects of Salmon Pituitary Gonadotropin, Ovine Leuteinizing Hormone, and Testosterone on the Testes and Seminal Vesicles of Hypophysectomized Catfish, <i>Heteropneustes fossilis</i> (Bloch) . . . . .	73
GUILLERMO F. WASSERMANN AND ELENA A. BERNARD. The Influence of Corticoids on the Phenylethanolamine- <i>N</i> -Methyl Transferase Activity in the Adrenal Glands of <i>Gallus domesticus</i> . . . . .	83
L. O. LARSEN AND P. ROSENKLIDE. Iodine Metabolism in Normal, Hypophysectomized, and Thyrotropin-Treated River Lampreys, <i>Lampetra fluviatilis</i> (Gray) L. ( <i>Cyclostomata</i> ) . . . . .	94
MILTON H. STETSON AND JOHN E. ERICKSON. Endocrine Effects of Castration in White-Crowned Sparrows . . . . .	105
R. K. TCHOLAKIAN AND K. B. EIK-NES. Steroidogenesis in the Blue Crab <i>Callinectes sapidus</i> Rathbun . . . . .	115
C. G. H. STEEL AND R. HARMSSEN. Dynamics of the Neurosecretory System in the Brain of an Insect, <i>Rhodnius prolixus</i> , during Growth and Molting . . . . .	125
Y. SHAHAM AND Z. LEWITUS. Radioiodine Metabolism in the Thyroid Gland of the Lizard <i>Agama stellio</i> . . . . .	142
ROBERT S. SCHMIDT. Anuran Feeding after Hypophysectomy . . . . .	149
SHIN-ICHI TESHIMA AND AKIO KANAZAWA. Bioconversion of Progesterone by the Ovaries of Crab, <i>Portunus trituberculatus</i> . . . . .	152
G. FRENKEL AND P. F. KRAICER. The Inhibition of Adrenocortical Function in the Lizard <i>Agama stellio</i> . . . . .	158
DAVID ZAMBRANO. The Nucleus Lateralis Tuberis System of the Gobiid Fish <i>Gillichthys mirabilis</i> . III. Functional Modification of the Neurons and Gonadotropic Cells . . . . .	164
DELON W. BARFUSS AND LEGRANDE C. ELLIS. Seasonal Cycles in Melatonin-Syn-	



thesis by the Pineal Gland as Related to Testicular Function in the House Sparrow ( <i>Passer domesticus</i> ) . . . . .	183
IAN P. CALLARD AND IAN CHESTER JONES. The Effect of Hypothalamic Lesions and Hypophysectomy on Adrenal Weight in <i>Sceloporus cyanogenys</i> . . . . .	194
WILLIAM B. RHOTEN. Light and Electron Microscopic Studies on Pancreatic Islets of the Lizard <i>Lygosoma laterale</i> . I. Normal and Glucose-Loaded Animals . . . . .	203
W. B. QUAY. Factors in the Measurement of Pineal Acetylserotonin Methyltransferase Activity in the Lizard <i>Sceloporus occidentalis</i> . . . . .	220
SANDY SORRENTINO, JR. AND RUSSEL J. REITER. Lack of Pineal-Induced Gonadal Regression in Dark-Exposed or Blind Hamsters after Surgical Isolation of the Medial-Basal Hypothalamus . . . . .	227

## NOTES

KAJ HOLMBERG. On the Light Sensitivity of the Atlantic Hagfish, <i>Myxine glutinosa</i> , Maintained against a White Background under Continuous Illumination . . . . .	232
L. BOQUIST, S. FALKMER, AND B. K. MEHROTRA. Ultrastructural Search for Homologues of Pancreatic $\beta$ -Cells in the Intestinal Mucosa of the Mollusc <i>Buccinum undatum</i> . . . . .	236
ERRATUM . . . . .	240

## NUMBER 2, OCTOBER 1971

ERIK DAHL, BERNDT EHINGER, BENGT FALCK, CLAES VON MECKLENBURG, HARRY MYHRBERG, AND EVALD ROSENGREN. On the Monoamine-Storing Cells in the Heart of <i>Lampetra fluviatilis</i> and <i>L. planeri</i> (Cyclostomata) . . . . .	241
Z. YARON. Observations on the Granulosa Cells of <i>Acanthobrama terrae-sanctae</i> and <i>Tilapia nilotica</i> (Teleostei) . . . . .	247
MOHAMMAD HABIBULLA. Neurosecretion in the Brain of a Scorpion <i>Heterometrus swammerdami</i> —a Histochemical Study . . . . .	253
BARBARA A. RICHARDSON AND ROGER DEROOS. Comparative Morphology of the Neurohypophysis of the Three Life Stages of the Central Newt ( <i>Notophthalmus viridescens louisianensis</i> ) . . . . .	256
RICHARD SADOVSKY AND ANDRE BENSADOUN. Thyroid Iodohormones in the Plasma of the Rooster ( <i>Gallus domesticus</i> ) . . . . .	268
TED HAYASHIDA. Biological and Immunochemical Studies with Growth Hormone in Pituitary Extracts of Holostean and Chondrosteian Fishes . . . . .	275
MANFRED GERSCH, KLAUS RICHTER, AND JÖRG STÜRZEBECKER. Weitere experimentelle Untersuchungen zum Wirkungsmechanismus des Neurohormons D von <i>Periplaneta americana</i> (L.) am "biologischen Modell" der Harnblase von <i>Bufo bufo</i> (L.): Beeinflussung des $\text{Na}^+$ -Transportes . . . . .	281
E. CAMPANTICO, M. OLIVERO, A. GUARDABASSI, M. T. RINAUDO, C. GIUNTA, AND R. BRUNO. Effects of Prolactin on Arginase Activity in the Liver of <i>Bufo bufo</i> Larvae under Different Experimental Conditions . . . . .	287
JACQUELINE L. SCHWARTZ. Inhibition of Nerve Cord Metamorphosis in the Western Spruce Budworm <i>Choristoneura occidentalis</i> Freeman (Lepidoptera: Tortricidae) by Juvenile Hormone Analogs . . . . .	293
CHARLES S. NICOLL AND C. W. NICHOLS, JR. Evolutionary Biology of Prolactins and Somatotropins. I. Electrophoretic Comparison of Tetrapod Prolactins . . . . .	300

ALBERT H. MEIER AND DONN D. MARTIN. Temporal Synergism of Corticosterone and Prolactin Controlling Fat Storage in the White-Throated Sparrow <i>Zonotrichia albicollis</i> . . . . .	311
E. M. RIVERA AND E. P. CUMMINS. Hormonal Induction of Dehydrogenase Enzymes in Mammary Gland <i>in Vitro</i> . . . . .	319
E. WAJC AND M. P. PENER. The Effect of the Corpora Allata on the Flight Activity of the Male African Migratory Locust, <i>Locusta migratoria migratorioides</i> (R. & F.) . . . . .	327
MORDECHAI ABRAHAM. The Ultrastructure of the Cell Types and of the Neurosecretory Innervation in the Pituitary of <i>Mugil cephalus</i> L. from Fresh Water, the Sea, and a Hypersaline Lagoon. I. The Rostral Pars Distalis . . . . .	334
KENNETH J. JUDY AND EDWIN P. MARKS. Effects of Ecdysterone <i>in Vitro</i> on Hindgut and Hemocytes of <i>Manduca sexta</i> (Lepidoptera) . . . . .	351
A. G. SATHYANESAN AND SHAMMIN HAIDER. Tetrapodlike Features of the Hypothalamophypophysial Vascularization in the Air-Breathing Teleost, <i>Heteropneustes fossilis</i> (Bl.) . . . . .	360
MARC BERTOUT AND ANDRÉ DHAINAUT. Etude cytochimique et autoradiographique de l'ovogenèse de <i>Nereis diversicolor</i> O. F. Müller (Annélide Polychète), dans les conditions naturelles et en l'absence d'hormone cérébrale . . . . .	371
J. K. DAVIDSON, S. FALKMER, B. K. MEHROTRA, AND S. WILSON. Insulin Assays and Light Microscopical Studies of Digestive Organs in Protostomian and Deuterostomian Species and in Coelenterates . . . . .	388

# NOTE

SHINTARO SUZUKI AND YOICHI KONDO. Demonstration of Thyroglobulin-like Iodinated Proteins in the Branchial Sac of Tunicates . . . . .	402
--	-----

## NUMBER 3, DECEMBER 1971

JAMES E. WOODS, GERALD W. DE VRIES, AND ROBERT C. THOMMES. Ontogenesis of the Pituitary-Adrenal Axis in the Chick Embryo . . . . .	407
MELVIN WEISBART AND D. IDLER. Identification and Quantification of Corticosteroids in the Atlantic Halibut, <i>Hippoglossus hippoglossus</i> L. . . . .	416
KIRSTEN KJÆR AND C. BARKER JØRGENSEN. Effects of Mammalian Gonadotropins on Ovary in the Toad <i>Bufo bufo bufo</i> (L.) . . . . .	424
S. VIJAYAKUMAR, C. BARKER JØRGENSEN AND KIRSTEN KJÆR. Regulation of Ovarian Cycle in the Toad <i>Bufo bufo bufo</i> (L.): Effects of Autografting Pars Distalis of the Hypophysis, of Extirpating Gonadotropic Hypothalamic Region, and of Partial Ovariectomy . . . . .	432
YUKIO AKIBA, HIROSHI ITOH, AND TATSURO MATSUMOTO. Rebound Phenomena in Thyroid Function after Withdrawal of Propylthiouracil in Growing Chicks . . . . .	444
C. HALLAHAN AND B. L. POWELL. Purification and Characterization of the Melanin-Dispersing Hormone from the Sinus Gland of the Shore Crab <i>Carcinus maenas</i> (L.) . . . . .	451
TERUMI NAKAJIMA, TAEKO NAKAYAMA, AND HIROFUMI SOKABE. Examination of Angiotensin-like Substances from Renal and Extrarenal Sources in Mammalian and Nonmammalian Species . . . . .	458
ANNE-MARIE LAVERDURE. Etude des conditions hormonales nécessaires à l'évolution de l'ovaire chez la nymphe de <i>Tenebrio molitor</i> (Coléoptère) . . . . .	467



TERRY N. TROBEC AND JON G. STANLEY. Ionoregulatory Responses of the Hypophysectomized Turtle <i>Chrysemys picta</i> to Osmotic Stresses . . . . .	47
JAN ZDAREK AND G. FRAENKEL. Neurosecretory Control of Ecdysone Release during Puparium Formation of Flies . . . . .	48
CHARLES S. NICOLL AND PAUL LICHT. Evolutionary Biology of Prolactins and Somatotropins. II. Electrophoretic Comparison of Tetrapod Somatotropins . . . . .	49
K. W. CHIU AND W. G. LYNN. Further Observations of the Role on the Thyroid in Skin-Shedding in the Shovel-Nosed Snake, <i>Chionactis occipitalis</i> . . . . .	50
S. ALMQVIST, E. MALMQVIST, C. OWMAN, M. RITZÉN, F. SUNDLER, AND G. SWEDIN. Dopamine Synthesis and Storage, Calcium-Lowering Activity, and Thyroidal Properties of Chicken Ultimobranchial Cells . . . . .	51
GENEVIEVE PAYEN, JOHN D. COSTLOW, JR., ET HELENE CHARNIAUX-COTTON. Etude comparative de l'ultrastructure des glandes androgènes de Crabes normaux et pédonculectomisés pendant la vie larvaire ou après la puberté chez les espèces: <i>Rhithropanopeus harrisii</i> (Gould) et <i>Callinectes sapidus</i> Rathbun . . . . .	52
ERIK HVIID LARSEN. Effect of Aldosterone and Oxytocin on the Active Sodium Transport across the Isolated Toad Skin in Relation to Loosening of <i>Stratum Corneum</i> . . . . .	54
V. F. THORNTON. The Effect of Change of Background Color on the Melanocyte-Stimulating Hormone Content of the Pituitary of <i>Xenopus laevis</i> . . . . .	55

## NOTES

V. P. DIXIT. The Karyometric Response of Caudal Neurosecretory Cells in <i>Clarias batrachus</i> to Sex Steroids . . . . .	56
MICHAEL J. ERPINO. Effect of Substrate on Histochemistry of $3\beta$ -Hydroxysteroid Dehydrogenase in Lizard Testes . . . . .	56
R. OZON, B. MARTIN, AND G. A. BOFFA. Protein Binding of Estradiol and Testosterone in Newt Serum ( <i>Pleurodeles waltlii</i> Michah.) . . . . .	56
BANGALORE I. SUNDARARAJ AND SHASHI V. GOSWAMI. Effects of Desoxycorticosterone and Hydrocortisone Singly and in Various Combinations on <i>in Vitro</i> Maturation of Oocytes of the Catfish, <i>Heteropneustes fossilis</i> (Bloch) . . . . .	57
J. E. KILHSTRÖM, E. LAKOMAA, AND H. HALL. A Probably Nongonadotropic Sperm-Releasing Activity in the Pituitary Gland from Mammals, Amphibians, and Fishes . . . . .	57
C. BARKER JØRGENSEN AND S. VIJAYAKUMAR. Is the Toad Pars Intermedia Under Both Excitatory and Inhibitory Nervous Control? . . . . .	57
GARY L. JACKSON AND RONALD F. LABISKY. Effects of Thiouracil on Testicular Regression, Thymus Weights, and Molt in Pheasants . . . . .	57
PETER K. T. PANG, NANCY B. CLARK, AND KEITH S. THOMPSON. Hypocalcemic Activities in the Ultimobranchial Bodies of Lungfishes, <i>Neoceratodus forsteri</i> and <i>Lepidosiren paradoxa</i> and Teleosts, <i>Fundulus heteroclitus</i> and <i>Gadus morhua</i> . . . . .	58
DVORAH BOSCHWITZ AND HOWARD A. BERN. Prolactin, Calcitonin, and Blood Calcium in the Toads <i>Bufo boreas</i> and <i>Bufo marinus</i> . . . . .	58
B. LOFTS AND L. Y. L. CHOY. Steroid Synthesis by the Seminiferous Tubules of the Snake <i>Naja naja</i> . . . . .	58

AUTHOR INDEX . . . . .	59
SUBJECT INDEX . . . . .	59